ADEQ
Arizona Department
of Environmental Quality

Year 2005

Air Quality Division

ANNUAL AIR EMISSIONS INVENTORY QUESTIONNAIRE

For Facilities Permitted to Operate a Crushing & Screening Plant

The 2005 Annual Emissions Inventory Questionnaire includes 4 forms that are required to be completed and submitted to the Air Quality Division. Instructions for each form are included below. Upon completion, submit the forms along with the signature by the Responsible Official of the facility within 90 days of receipt of a letter from the Department.

FORM 1: Facility General Information

SECTION I thru III: Complete all fields as requested.

FORM 2: Equipment, Stack & Location Data

Equipment Data: List all the on-site equipment along with the Authorization To Operate (ATO) number where available. Indicate, if not available.
Stack Data: Provide details of each stack.
Location Data: If the portable equiment was moved from one location to another,list the dates, the counties, the latitude & longitude or address/driving direction for the portable equipment that was operated during the year 2005.

Once data is inputted, the formulas are set to complete the calculations. Therefore, do not move or change any of the fields or columns. If moved the results will be wrong calculations.

FORM 3A & 3B: Emissions Data - Point & Fugitive Emissions

Enter the quanitity, amount processed (tons/hr) and the total hours operated for each of the different processes.

FORM 3C: Emissions Data - Generator Emissions

Based on the type of the fuel used, (Gasoline, Diesel, or Natural Gas/Liquid Propane), choose the appropriate table to inut the generator horsepower and hours of operation during the calendar year 2005

FORM 4: Summary & Certification

A summarization of all the emissions by each pollutant will be listed within this form. All reports submitted to the Department should be certified true and accurate by the Responsible Official of the facility. This person is the owner or operator of the facility. **If there is a change of the Responsible Official of the facility, please notify the Department with an additional letter stating the change.**

The completed questionnaire should be submitted to the following address:

Arizona Department of Environmental Quality
Attention: Darlene Celaya, Emission Inventory Team
Air Quality Division, Compliance Section 3415A-3
1110 West Washington Street
Phoenix, AZ 85007

If you have any question or have difficulty completing this form, please contact Darlene Celaya at (602) 771-7662.

FORM 1: FACILITY GENERAL INFORMATION **YEAR 2005**

SECTION I: ***Plant Identification & Mailing Information***

Customer Name: _____

Place Name: _____ Place ID: _____

Mailing Address: _____ City: _____ State: _____ Zip: _____

County: _____

Phone: _____ Fax: _____

Permit #/LTF # _____ General Permit: Yes □ No □

SECTION II: ***EI Contact***

EI Contact Name: _____ Title: _____

Telephone: _____ Fax: _____

SECTION III: ***Confidential Request***

Pursuant to Arizona Revised Statues §49-432 and §49-201, do you claim the Emissions Inventory data submittal confidential. If yes include which portions of the inventory are confidential along with a brief explanation:

Yes □
No □

FORM 2: EQUIPMENT, STACK, & LOCATION DATA **YEAR 2005**

Equipment Data

Equipment Type	Equipment ID	ATO #	Max. Rated Capacity	Amount Processed	Hours Operated

Stack Information

	Stack #1	Stack #2	Stack #3
Process Type/Description			
Height (feet)			
Diameter (feet)			
Velocity (feet/second)			
Exhaust Gas Temperature (F)			
Flow Rate (actual cubic feet per minute)			

Operation Location

Date		County of Operation	Latitude	Longitude	Address/Driving Directions
From	To				

FORM 3A: EMISSIONS DATA - POINT				YEAR 2005		
Source	Pollutant	(1) Quantity	(2) Amount Processed tons/hour	(3) Hours Operated hours/year	(4) Emission Factor pounds/ton/unit	Emissions = (1)x(2)x(3)x(4)/2000 tons/year
	PM10				0.00017	
	PM2.5				0.00032	
Batch Drop Operations	PM				0.00036	
	PM10				0.00017	
	PM2.5				0.00032	
Loading feed hopper	PM				0.00036	
	PM10				0.0049	
Pneumatic loading of lime	PM2.5				0.0049	
silo	PM				0.0089	
	PM10				0.000046	
Lime transfer onto conveyor	PM2.5				0.000013	
belts	PM				0.00014	
	PM10				0.00054	
	PM2.5				0.0001	
Primary Crushing	PM				0.0012	
	PM10				0.00054	
	PM2.5				0.0001	
Secondary Crushing	PM				0.0012	
	PM10				0.00054	
	PM2.5				0.0001	
Tertiary Crushing	PM				0.0012	
	PM10				0.0022	
	PM2.5				0.0022	
Fine Crushing	PM				0.0036	
	PM10				0.00074	
	PM2.5				0.00005	
Screening	PM				0.0022	
	PM10				0.0022	
	PM2.5				0.0022	
Fine Screening	PM				0.0036	
	PM10				0.00017	
	PM2.5				0.00032	
Stackers	PM				0.00036	
	PM10				0.000046	
	PM2.5				0.000013	
Conveyor transfer points	PM				0.00014	

FORM 3B: EMISSIONS DATA - POINT & FUGITIVES **YEAR 2005**

Conversion Number - 1 foot = 0.0001894 mile

Source	Pollutants	(1) Vehicle Miles Traveled in 2005 miles	(2) Emission Factor pounds/VMT	Emissions = (1)x(2)/2000 tons/year
Fugitive Emissions - Haul Roads	PM10		0.1671	
	PM2.5		0.0256	
	PM		0.6555	

Source	Pollutants	(1) No. of Piles	(2) Hours Stored hrs/year	(3) Emission Factor pounds/hour/piles	Emissions = (1)x(2)x(3)/2000 tons/year
Fugitive Emissions - Storage Piles	PM10			0.00004828	
	PM2.5			0.0000142	
	PM			0.00004828	

Source	Pollutant	(1) Quantity	(2) Amount Processed tons/hour	(3) Hours Operated hours/year	(4) Emission Factor pounds/ton/unit	Emissions = (1)x(2)x(3)x(4)/2000 tons/year
Truck Unloading - Fragmented Stone	PM10				0.000016	
Truck Unloading - Conveyor, crushed Stone	PM10				0.0001	
Wet Drilling - Unfragmented Stone	PM10				0.00008	

FORM 3C: EMISSIONS CALCULATIONS - GENERATOR YEAR 2005

	FUEL - GASOLINE				*FUEL - NATURAL GAS OR LIQUIFIED PETROLEUM GAS*			
	Generator #1		**Generator #2**		**Generator #1**		**Generator #2**	
	Max. Capacity (HP-hr) (1)	Operational Hours (hours/year) (2)	Max. Capacity (HP hr) (4)	Hours (hours/year) (5)	Max. Capacity (HP-hr) (1)	Hours (hours/year) (2)	Max. Capacity (HP hr) (4)	Operational Hours (hours/year) (5)
Pollutants	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/hp-hour	Emissions = (4)x(5)x(6)/2000 tons/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/hp-hour	Emissions = (4)x(5)x(6)/2000 tons/year
PM10	0.0007		0.0007		0.0001		0.0001	
PM	0.0007		0.0007		0.0001		0.0001	
CO	0.4390		0.4390		0.0029		0.0029	
VOC	0.0220		0.0220		0.0008		0.0008	
SOx	0.0006		0.0006		4.35E-06		4.35E-06	
NOx	0.0110		0.0110		0.0206		0.0206	
1,3-Butadiene	2.74E-07		2.74E-07		1.69E-06		1.69E-06	
Acenaphthene	9.94E-09		9.94E-09		-		-	
Acenaphthylene	3.54E-08		3.54E-08		-		-	
Acetaldehyde	5.37E-06		5.37E-06		7.10E-06		7.10E-06	
Acrolein	6.48E-07		6.48E-07		6.70E-06		6.70E-06	
Anthracene	1.31E-08		1.31E-08		-		-	
Benzene	6.53E-06		6.53E-06		4.02E-06		4.02E-06	
Benzo(a)anthracene	1.18E-08		1.18E-08		-		-	
Benzo(a)pyrene	1.32E-09		1.32E-09		-		-	
Benzo(b)fluoranthene	6.94E-10		6.94E-10		-		-	
Benzo(g,h,l)perylene	3.42E-09		3.42E-09		-		-	
Benzo(k)fluoranthene	1.09E-09		1.09E-09		-		-	
Butyr/isobutyraldehyde	-		-		1.24E-07		1.24E-07	
Carbon Tetrachloride	-		-		4.51E-08		4.51E-08	
Chlorobenzene	-		-		3.28E-08		3.28E-08	
Chloroform	-		-		3.49E-08		3.49E-08	
Chrysene	2.47E-09		2.47E-09		-		-	
1,1-Dichloroethane	-		-		2.88E-08		2.88E-08	
1,2-Dichloroethane	-		-		2.88E-08		2.88E-08	
1,2-Dichloropropane	-		-		3.31E-09		3.31E-09	
1,3-Dichloropropene	-		-		3.23E-08		3.23E-08	
Dibenz(a,h)anthracene	4.08E-09		4.08E-09		-		-	
Ethane	-		-		1.79E-04		1.79E-04	
Ethylbenzene	-		-		6.31E-08		6.31E-08	
Ethylene Dibromide	-		-		5.42E-08		5.42E-08	
Fluoranthene	5.33E-08		5.33E-08		-		-	
Fluorene	2.04E-07		2.04E-07		-		-	
Formaldehyde	8.26E-06		8.26E-06		5.22E-05		5.22E-05	
Indeno(1,2,3-cd)pyrene	2.63E-09		2.63E-09		-		-	
Methane	-		-		5.86E-04		5.86E-04	
Methanol	-		-		7.79E-06		7.79E-06	
Methylene Chloride	-		-		1.05E-07		1.05E-07	
Naphthalene	5.94E-07		5.94E-07		2.47E-07		2.47E-07	
Phenanthrene	2.06E-07		2.06E-07		-		-	
Propylene	1.81E-05		1.81E-05		-		-	
Pyrene	3.35E-08		3.35E-08		-		-	
Styrene	-		-		3.03E-08		3.03E-08	
1,1,2,2-Tetrachloroethane	-		-		6.44E-08		6.44E-08	
1,1,2-Trichloroethane	-		-		3.90E-08		3.90E-08	
Toluene	2.86E-06		2.86E-06		1.42E-06		1.42E-06	
Vinyl Chloride	-		-		1.83E-08		1.83E-08	
Xylene	2.00E-06		2.00E-06		4.96E-07		4.96E-07	

FORM 3C: EMISSIONS CALCULATIONS - GENERATORS	YEAR 2005

	FUEL - DIESEL - LESS THAN OR EQUAL TO 600 HP				*FUEL - DIESEL - GREATER THAN 600 HP*			
	Generator #1		**Generator #2**		**Generator #1**		**Generator #2**	
	Max. Capacity (HP-hr) (1)	Operational Hours (hours/year) (2)	Max. Capacity (HP hr) (4)	Operational Hours	Max. Capacity (HP-hr) (1)	Operational Hours	Max. Capacity (HP hr) (4)	Operational Hours (hours/year) (5)
Pollutants	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/hp-hour	Emissions = (4)x(5)x(6)/2000 tons/year	Emission Factor (3) pounds/hp-hour	Emissions = (1)x(2)x(3)/2000 tons/year	Emission Factor (6) pounds/hp-hour	Emissions = (4)x(5)x(6)/2000 tons/year
PM10	0.0022		0.0022		0.0006		0.0006	
PM	0.0022		0.0022		0.0007		0.0007	
CO	0.0067		0.0067		0.0055		0.0055	
VOC	0.0025		0.0025		0.0007		0.0007	
SOx	0.0021		0.0021		0.0073		0.0073	
Nox	0.0310		0.0310		0.0240		0.0240	
Acenaphthene	9.94E-09		9.94E-09		5.43E-06		5.43E-06	
Acenaphthylene	3.54E-08		3.54E-08		1.97E-06		1.97E-06	
Acetaldehyde	5.37E-06		5.37E-06		1.76E-07		1.76E-07	
Acrolein	6.48E-07		6.48E-07		5.52E-08		5.52E-08	
Anthracene	1.31E-08		1.31E-08		5.52E-07		5.52E-07	
Benzene	6.53E-06		6.53E-06		5.43E-06		5.43E-06	
Benzo(a)anthracene	1.18E-08		1.18E-08		1.76E-07		1.76E-07	
Benzo(a)pyrene	1.32E-09		1.32E-09		9.10E-07		9.10E-07	
Benzo(b)fluoranthene	6.94E-10		6.94E-10		6.46E-08		6.46E-08	
Benzo(g,h,l)perylene	3.42E-09		3.42E-09		3.28E-08		3.28E-08	
Benzo(k)fluoranthene	1.09E-09		1.09E-09		8.96E-08		8.96E-08	
1,3-Butadiene	2.74E-07		2.74E-07		-		-	
Chrysene	2.47E-09		2.47E-09		2.86E-07		2.86E-07	
Dibenz(a,h)anthracene	4.08E-09		4.08E-09		8.61E-09		8.61E-09	
Fluoranthene	5.33E-08		5.33E-08		2.82E-08		2.82E-08	
Fluorene	2.04E-07		2.04E-07		2.60E-08		2.60E-08	
Formaldehyde	8.26E-06		8.26E-06		4.35E-09		4.35E-09	
Indeno(1,2,3-cd)pyrene	2.63E-09		2.63E-09		1.07E-08		1.07E-08	
Naphthalene	5.94E-07		5.94E-07		7.77E-09		7.77E-09	
Phenanthrene	2.06E-07		2.06E-07		1.53E-09		1.53E-09	
Propylene	1.81E-05		1.81E-05		1.80E-09		1.80E-09	
Pyrene	3.35E-08		3.35E-08		2.90E-09		2.90E-09	
Toluene	2.86E-06		2.86E-06		2.42E-09		2.42E-09	
Xylene	2.00E-06		2.00E-06		3.89E-09		3.89E-09	

FORM 4: SUMMARY & CERTIFICATION	YEAR 2005

Total all the emissions for each pollutant and enter in the table below

Pollutant	Tonnage (tons per year)
Particulate Matter (PM)	
Particulate Matter less than 2.5 microns (PM2.5)	
Particulate Matter less than 10 microns (PM10)	
Nitrogen Oxides (NOx)	
Sulfur Oxides (SOx)	
Volate Organic Compounds (VOC)	
Carbon Monoxide (CO)	
Hazard Air Pollutants (HAPs)	

Certification of Truth & Accuracy

I certify that I have knowledge of the facts set forth in this questionnaire, and that the same are true, accurate and complete to the best of my knowledge and belief, and that all information not identified by me as confidential in nature shall be treated by the Arizona Department of Environmental Quality as public record.

Signature of Responsible Official: _____ Date: _____

Print Name: _____

Title: _____